

WHAT IS CLAIMED IS:

1. Surgical apparatus comprising an elongated cannula further comprising:

a first lumen extending within the cannula between proximal and distal ends

thereof for housing an endoscope therein;

a transparent tip disposed at the distal end of the first lumen for providing

dissection and endoscopic visualization therethrough; and

a second lumen for housing a surgical instrument therein for performing surgical

procedures on tissue viewed through the transparent tip, the second lumen

having an open distal end positioned intermediate the proximal and distal

ends of the first lumen.

<sup>112</sup>  
2. The apparatus of claim 1 wherein the second lumen houses surgical scissors.

3. The apparatus of claim 2 wherein blades of the scissors are curved in a predetermined angle.

4. The apparatus of claim 3 wherein the second lumen is keyed to maintain tips of the scissors in a predetermined rotational orientation with respect to the transparent tip.

5. The apparatus of claim 3 wherein the blades of the scissors curve toward the transparent tip to provide endoscopic visualization of the blades upon extension from the second lumen.

6. The apparatus of claim 1 wherein the transparent tip is tapered.

7. The apparatus of claim 1 further comprising:

2 a flexible hood having an open proximal end coupled to the distal end of the  
3 second lumen and operable in a transition orientation responsive to the  
4 surgical instrument being retracted within the second lumen, and in an  
5 expanded orientation in response to extension therethrough of a surgical  
6 instrument projecting forward from the second lumen.

Sub D1 8. The apparatus of claim 7 wherein the hood comprises an elastic material.

5 9. The apparatus of claim 7 wherein the distal end of the hood extends substantially to the  
2 proximal edge of the tapered tip.

1 10. The apparatus of claim 7 wherein the hood comprises a material having sufficient  
2 smoothness to facilitate tissue sliding over the hood.

112 11. The apparatus of claim 1 wherein (the surgical tool) is a bisector. NA

1 12. The apparatus of claim 1 wherein the transparent tip has a proximal end of maximal  
2 dimension less than a maximal dimension of the cannula.

5 13. The apparatus of claim 1 wherein the cannula includes a transition contour near the  
2 location therealong at which the first lumen extends beyond the second lumen to reduce axial  
3 force required to advance the cannula through tissue.

112 14. The apparatus of claim 1 wherein (the surgical tool) is a retractor having a curved distal  
end for cradling a vein. NA

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1 15. The apparatus of claim 1 wherein the cannula comprises another lumen for housing  
2 therein a dissection loop instrument including one or more stems extending through other lumen  
3 or lumens and including a curved element attached to a distal end of the stem or stems.

1 16. The apparatus of claim 15 wherein the cannula has a storage groove configured to store a  
2 dissection loop of the dissection loop instrument.

Self 1 17. A surgical procedure using a multi-lumen cannula including a first lumen extending there  
2 through between proximal and distal ends thereof and having a transparent tapered tip at the  
3 distal end of the first lumen for receiving an endoscope therein, and including a second lumen  
4 extending for receiving a surgical instrument therein, the procedure comprising:

5 advancing the cannula to dissect tissue with the transparent tapered tip under  
6 endoscopic visualization through the transparent tip;

7 selectively extending the surgical instrument out of the second lumen forward of  
8 the cannula; and

9 performing the surgical procedure using the surgical instrument under endoscopic  
10 visualization through the transparent tapered tip.

1 18. The procedure of claim 17 wherein the surgical tool is surgical scissors, and performing  
2 the surgical procedure comprises transecting side branches of a saphenous vein.

1 19. The procedure of claim 18 further comprising the steps of:

2 removing the scissors from the second lumen of the cannula;

3 inserting a cradled retractor into the second lumen of the cannula;

extending the retractor from the second lumen forward of the cannula to cradle the vein; and

advancing the retractor along the vein under endoscopic visualization through the transparent tip to ensure that side branches of the vein have been transected.

20. A method of harvesting veins using a multi-lumen cannula in which a first lumen houses an endoscope and has a transparent tip and a second lumen houses a surgical scissors comprising:

- advancing the cannula along a vein under endoscopic visualization;
- dissecting tissue responsive to advancing the cannula with the transparent tip;
- responsive to viewing a sidebranch requiring transection, extending the surgical  
scissors out of the cannula; and
- transecting the sidebranch.